STATE OF VERMONT
DISTRICT #5 ENVIRONMENTAL COMMISSION

RE:	Mt. Mansfield Television, Inc. Joy Drive, P.O. Box 608 Burlington, VT 05402 and University of Vermont 109 South Prospect Street Burlington, VT 05405	) Amendment Application) 5L0759-6) Findings of Fact and) Conclusions of Law and) Order) 10 V.S.A., Chapter 151) (Act 250)

INTRODUCTION

On July 29, 1996, an application for an Act 250 permit was filed by Mt. Mansfield Television, Inc. and the University of Vermont for a project generally described as the construction of an intermittent sand filter sewerage system atop Mt. Mansfield to serve the WCAX-TV transmitter building. The project site is in the Town of Stowe. The tract of land consists of 400± acres with 1.4 acres involved in the project area. Co-applicant Mt. Mansfield Television, Inc.'s legal interest in the site is by means of a lease with property owner University of Vermont.

Under Act 250, projects are reviewed based on the 10 Criteria of 10 V.S.A. §6086(a)1-10. Before granting a permit, the Board or District Commission must find that the project complies with these criteria and is not detrimental to the public health, safety or general welfare.

Decisions must be stated in the form of findings and conclusions of law. The facts we have relied upon are contained in the documents on file identified as Exhibits 1-18, and the evidence received at a hearing held on August 29, 1996. At the end of the hearing, the proceeding was recessed pending submission of additional information.

In response to a September 5th Hearing Recess Memorandum from the District Commission the applicant filed supplemental materials on September 6th (Exhibit 15) and 12th (Exhibit 16) The District Commission conducted telephonic deliberations on September 16th and then requested additional comment from the Assistant Regional Engineer of the Department of Environmental Conservation (Exhibit 17). A response was received on September 20th (Exhibit 18) and the Commission completed its deliberations on that same date.

Parties to this application who were present at the hearing are:

(A) The Applicants by Peter Martin, Charles Grenier, P.E., Carl Crawford, Harris Abbot (UVM), Rick Paradis (UVM) and others
(B) The Department of Environmental Conservation was represented at the hearing in response to an August 19th request for assistance from the District Commission. The Department representatives were Chief of Engineering Roger Thompson, Jr., Assistant Regional Engineer John Klimenok and James Caffry, Esq.

Procedural History

The District Commission issued Land Use Permit 5L0759-5 on September 26, 1995 and authorized the applicants to utilize a temporary sewerage system consisting of two storage tanks which would be pumped on a seasonal basis. Sewage would be trucked to the Stowe municipal treatment plant. The Commission specified in condition 9 of the permit that the authorization would remain valid until September 30, 1996. By August 1, 1996, the applicants were to file an amendment application proposing a permanent means of sewage disposal.

FINDINGS OF FACT

In making the following findings, we have summarized the statutory language of the 10 Criteria of 10 V.S.A. §6086(a). Without objection from the applicants or any party, the Commission limited the scope of the hearing to criteria 1(A) and 1(B) and incorporated by reference all pre-filed material under other relevant criteria - namely, criteria 4 and 8. Accordingly, the Commission limits its formal findings and conclusions to criteria 1(A), 1(B), 4 and 8.

1. **The project as proposed will not result in undue water pollution:**

   WATER POLLUTION:

   (A) Headwaters:

   1. This project is in a headwaters area as defined by this section due to its location above 1,500 feet in elevation. The Commission incorporates its findings and conclusions under criterion 1(B).

(B) Waste Disposal:

2. The proposed sewerage system will consist of an intermittent sand filter which will be constructed by modifying an existing 1,500 gallon septic tank installed on the site pursuant to Land Use Permit 5L0759-5.. Effluent will be discharged from the filter into a dispersal mound. (Exhibits 3 and 13).

3. The sewerage system is designed for a maximum daily flow of 50 gallons. This design flow will allow the installation of a 1.6 gallon low flow flush toilet to replace the electric incinerating toilet. Flows into the system will also include wastewater from a food preparation area, dishwashing and an employee shower. (Exhibit 3).

4. Intermittent sand filters were not approvable as waste disposal systems in Vermont until 1996 when revisions were promulgated to the Department of Environmental Conservation Protection Rules. (Testimony of Thompson)

5. The Department is confident that sand filters will produce an effluent quality comparable to that of secondary treatment at a wastewater plant. (Testimony of Thompson)

6. Sand filters are in relatively widespread use in the states of Oregon and Washington. The use of these systems is well received. (Testimony of Crawford)

7. An experimental sand filter system is in place in Addison County, Vermont. Results of monitoring at this site show good treatment levels. (Testimony of Crawford)

8. Neither the applicants' nor the state's engineers were aware of any sand filter and dispersal mound system which has been installed and used at an elevation, subject to frigid winter conditions comparable to those found on the summit of Mt. Mansfield. (Testimony of Crawford and Thompson)

9. The District Commission expressed concerns about potential freezing of the sewerage system, particularly the "at grade" mound. The project engineer knew of only one in-ground leachfield which had frozen and

that was due to contractor error. He expressed an opinion that the proposed dispersal mound will not freeze since it will be located in a sheltered area and will benefit from the insulating qualities of snow cover. (Testimony of Grenier)

10. The state engineer indicated that in his experience he was aware of a few mound systems which had frozen. However, since he estimated that the effluent will be "well above 32°F when pumped into the mound", he stated that in his professional opinion the dispersal mound will be unlikely to freeze. (Testimony of Klimenok)

11. In the event that the mound did freeze, the applicant could reduce flows to the system, store effluent in the existing tanks on the site and then truck the effluent to a treatment facility. (Testimony of Grenier)

12. During the 1995-96 winter season, the two sewage holding tanks at the site did not freeze. (Testimony of Teffner)

13. The Department's engineer agreed that the project site is a unique environmental setting. He suggested that the installation of some insulation during the first year of mound use "wouldn't hurt". (Testimony of Thompson)

14. The Department of Environmental Conservation issued Wastewater Permit 5-0809-1 approving the proposed sewerage disposal system. (Exhibit 12)

15. The Department's Permit included a variance clause under the Environmental Protection Rules since the slope upon which the dispersal mound will be constructed exceeds the typical standard required under the Rules. Nevertheless, in all other respects, the mound site meets Department standards including a representation that a minimum of 36 inches of native soils are present upon which the mound will be constructed. (Testimony of Thompson and Klimenok)

16. In response to a request from the District Commission at the hearing, the applicants filed a proposed annual sampling and monitoring schedule which will be conducted during the month of June for the

first 3 years of operation of the sand filter system. Samples will be collected from the septic tank effluent, filter effluent and dispersal mound effluent. Reports will be filed with the Department of Environmental Conservation Wastewater Management Division. (Exhibit 15)

17. The District Commission also requested a position from the applicants on the possible insulating of the dispersal mound to prevent freezing. The applicants' initial response was to propose the installation of two inch thick foam board directly above the dispersal mound trench, but below the filter fabric. A subsequent submittal clarified that the applicants propose to install four inches of rigid insulation over the entire length of dispersal main, including the force main. (Exhibits 15 and 16)

18. The applicants' engineer represented that by insulating all pipe and structures to maintain the warm wastewater temperature - and in consideration of the depth of the sand filter, the flow capacity of the at-grade system and the sand and stone composition of the at-grade system, there is not a substantial potential that the system will freeze. (Exhibit 16)

19. The District Commission requested that the Department of Environmental Conservation comment on the applicants' proposal for the insulation of the system. (Exhibit 17)

20. The Department stated the placement f the foam board over the lateral pipes and/or stone in the filtrate bed would decrease the chance of freezing in the bed and will not interfere with the functions of the sewerage system. Although the Department does not normally consider such uses of insulation for wastewater systems, it would be appropriate for this project. (Exhibit 18)

Conclusions

The Commission concludes that the record supports the issuance of a land use permit. The design of the system shall be modified to include the installation of insulation as described in Exhibit 16. By condition the Commission will require that the applicants implement the sampling and

monitoring proposal described in finding #16. The applicants shall file copies of all reports with the District Commission by August 1st of each year. The Commission reserves the right to extend the sampling and monitoring proposal beyond the initial 3 year period. The Commission also requests that the Department of Environmental Conservation consider conducting an annual inspection of the system given its location in a unique ecological setting. Continuing jurisdiction will be retained over the project and should the system not perform as herein anticipated, the Commission reserves the right to convene a hearing to reconsider the alternatives analyses set out in Exhibit 6 as well as other options which may become available over time. Additionally, the Commission reserves the right to require modified use, or abandonment, of the system pending the outcome of the eventual review of the ongoing colocation area master plan.

4. The project will not result in unreasonable soil erosion.

21. During construction, a silt fence will be installed along the southern limits of the 1± acre construction site. (Exhibits 3 and 13)

22. After the filter system has been installed, all disturbed areas will be heavily mulched and erosion netting will be installed. A special seed mix will be applied as recommended by the UVM Natural Area manager. (Exhibits 3 and 9)

8. The project will not have undue adverse effects on aesthetics or rare and irreplaceable natural areas.

23. The project site is within and/or adjacent to the UVM Natural Area on the summit of Mt. Mansfield. (See Findings of Fact 5L0759-5)

24. At the hearing, the District Commission asked about potential impacts on rare plant communities in the Natural Area should effluent from the mound travel along ledge into vegetated areas below the project site.

25. The UVM Natural Area manager described the area's natural community as one which exists in nutrient poor soils. Impacts could result if added nutrients were introduced into the setting in the form of discharges of effluent from the mound. (Testimony of Paradis)

26. The Natural Area manager noted that the sewerage system would be used for relatively small amounts of effluent. He offered a suggestion that, if deemed necessary by the District Commission, a monitoring program could be devised for the plants and soils downgradient of the project site. (Testimony of Paradis)

27. The Long Trail is situated about 400 feet to the west of and downgradient from the project site. Varying topography is between the site and the Trail. (Testimony of Grenier and Paradis)

Conclusions

The record supports a conclusion that undue adverse impacts will not result under this criterion. The Commission will require that co-permittee UVM devise an appropriate monitoring program per finding 26 and that a proposal be provided by November 1, 1996 for District Commission review and approval. The monitoring program shall be implemented as soon as seasonably possible.

CONCLUSIONS OF LAW

Based upon the foregoing Findings of Fact, it is the conclusion of this District Environmental Commission that the project described in the application referred to above, if completed and maintained in conformance with all of the terms and conditions of that application, and of Land Use Permit #5L0759-6 will not cause or result in a detriment to public health, safety or general welfare under the criteria described in 10 V.S.A.

Order

Based upon the foregoing Findings of Fact and Conclusions of Law, Land Use Permit #5L0759-6 is hereby issued.

Dated at Barre, Vermont this 20th day of September, 1996.

BY: /s/ Philip H. Zalinger, Jr.
Philip H. Zalinger, Jr., Chair

Others participating in this decision:

Paul Poirier
Allan R. Heath

c:\files\mnsfld.tv

9/23/96 CASE SUMMARY

APPLICATION NUMBER: 5L0759-6
APPLICANT NAME: MT. MANSFIELD TELEVISION, INC.
PROJECT DESCRIPTION: SAND FILTER SEWERAGE SYSTEM

PROJECT TOWN: STOWE

DISTRICT COORDINATOR: STANAK
CHAIRPERSON: ZALINGER
2ND COMMISSIONER: POIRIER
3RD COMMISSIONER: HEATH

APPLICATION RECEIVED IN THE DISTRICT OFFICE:	7/29/96
APPLICATION SCREENED FOR COMPLETENESS:	7/29/96
APPLICATION FILING DATE (DATE COMPLETE):	8/06/96
MAJOR/MINOR:	MJ
DATE OF PREHEARING CONFERENCE (IF ANY):	
DATE OF FIRST HEARING/RESPONSE DATE:	8/29/96
DATE OF LAST HEARING:	8/29/96
DATE RECESS MEMORANDUM:	
DATE LAST RECESS/MEMO ITEM RECEIVED:	
DATE WASTEWATER MGT. DIVISION:	8/26/96
DATE HEARING ADJOURNED:	
DATE DECISION ISSUED:	9/20/96

STATUS: DECISION ISSUED ON 9/20/96
DENIED: WITHDRAWN: APPEALED:

DAYS TO REVIEW FOR COMPLETENESS:	0
DAYS INCOMPLETE:	8
DAYS TO FIRST HEARING:	23
DAYS IN RECESS:	
ADDITIONAL APPLICANT DELAY:	0
DAYS TO ADJOURN AFTER FINAL RECEIPT:	
DAYS TO ISSUE AFTER WASTEWATER DIV. PERMIT:	25
DAYS TO ISSUE AFTER ADJOURNMENT:	

TOTAL DAYS TO PROCESS APPLICATION (FILING DATE TO ISSUANCE) : 45

TOTAL IN-HOUSE PROCESSING TIME (TOTAL TIME LESS DAYS RECESSED AND DAYS DELAYED BY APPLICANT) :

EXHIBIT I

State of Vermont
ENVIRONMENTAL BOARD
10 V.S.A. §§ 6001-6092

Re: Gary Savoie d/b/a WLPL and Eleanor Bemis — Land Use Permit Application #2W0991-EB (Reconsideration)

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

I. BACKGROUND

The above-referenced matter comes before the Board on appeal from the decision of the District #2 Environmental Commission ("Commission") to grant Gary Savoie d/b/a WLPL and Eleanor Bemis ("Applicants") a land use permit pursuant to 10 V.S.A. §§ 6001-6092 ("Act 250"). The Applicants were initially granted Land Use Permit #2W0991 by the District Commission on March 8, 1995. On April 5, 1995, two appeals were filed with the Environmental Board ("Board"): one by Sarah Ann Martin and the other by Edmund and Veronica Brelsford. The Board considered the appeals and on October 11, 1995, issued a decision denying the permit. For the Board's initial permit denial see Re: Gary Savoie, d/b/a WLPL and Eleanor Bemis, #2W0991-EB, Findings of Fact, Conclusions of Law, and Order (Oct. 11, 1995) ("Decision"). In the Decision, the Board declined to issue a land use permit because the proposed tower failed to comply with Criterion 10 of 10 V.S.A. §6086(a), with respect to the Windham Regional Plan ("Regional Plan").

Specifically, the Decision noted that the Applicants' application did not conform to the Regional Plan's policies to discourage construction of new communications facilities in favor of existing facilities. The Applicants were, therefore, informed with specificity of the sole reason for the Board's denial. In order to attempt to remedy the deficiency which led to the Board denial, the Applicants requested that the Commission reconsider their application. The request was timely filed pursuant to Environmental Board Rule ("EBR") 31(B) and sought to correct the deficiencies in the application which were the basis of the permit denial.

On May 24, 1996, the Commission issued its decision to grant the permit after review of the Applicants' request for reconsideration of the Decision ("Reconsideration Decision"). The Reconsideration Decision authorized the Applicants to construct a 110 foot communications tower on property including Bemis Hill in the towns of Athens and Rockingham in Windham County.

On June 20, 1996, Edmund and Veronica Brelsford ("Brelsfords"), through their attorney, Gerald R. Tarrant, filed a Notice of Appeal with the Board along with a Statement of Issues, List of Witnesses, and Summary of Evidence. On June 24, 1996, Sarah Ann

Martin, through her attorney, Jonathon Bump, also filed a Notice of Appeal (Ms. Martin and the Brelsfords are collectively referred to herein as "Appellants"). On July 1, 1996, Applicants, through their attorney, Peter Van Oot, filed a cross-appeal in which they contend that the District Commission erred in granting party status to the Windmill Hill Pinnacle Association ("WHP Association"). Chair Ewing scheduled a prehearing conference in this matter for July 29, 1996.

On the eve of the scheduled conference, Mr. Tarrant and Mr. Van Oot contacted Chair Ewing to inform him that the parties had been working toward an informal resolution of the issues in controversy. Accordingly, the parties requested, and Chair Ewing granted, a 60 day postponement of the prehearing conference. Parties were directed to file a status memo in mid-September and advised to plan on a September 30, 1996 prehearing conference. On September 13, 1996, Applicants filed a letter through which Applicants and Appellants requested an additional 30 day postponement. Parties stated that they would use that time to review a Memorandum of Understanding circulating among the parties which was represented to provide the structure for mediating the issues on appeal. That postponement request was also granted, and a teleconference was tentatively scheduled for November 18, 1996, in the event that an informal resolution was not reached by the parties prior to that date.

On November 4, 1996, the parties, through Mr. Tarrant, informed the Board that while they sought to resolve the matter voluntarily, there were still some issues that required additional time and consideration by the parties. Parties again sought additional time. In order for the Board and its staff to become apprised of the progress made to date, and to schedule a hearing, Chair Ewing issued a formal notice of prehearing conference for November 18, 1996, to be held by telephone.

The following persons participated in the November 18 conference:

John T. Ewing, Board Chairman
Edmund and Veronica Brelsford, by their attorney, Gerald R. Tarrant, Esq.;
Sarah Ann Martin, and her attorney, Jonathon Bump, Esq.;
Gary Savoie, and his attorney, Peter D. Van Oot, Esq.

II. PRELIMINARY ISSUES

Three preliminary issues in dispute in this matter were identified in the written submissions of the parties and during the conference. They can be categorized as follows:

1. Party status of the Windmill Hill Pinnacle Association;

2. Whether, in addition to Policies 2 and 4, the Board should review compliance with Policy 5, to determine whether the Project conforms with the requirements of the Windham Regional Plan, and thereby complies with Criterion 10 of Act 250;

3. Whether the language of the telecommunications policies of the Windham Regional Plan addressing existing facilities and existing stations, includes only those facilities and stations which are specifically designed for the transmission of telecommunication or radio broadcast signals, or whether the terms "facilities" and "stations" should be interpreted more broadly to include other structures, including those not designed for telecommunications purposes, but which for some reason (height, prominence, proximity to transmittees, etc.) are aptly suited for the purpose of accommodating a broadcast transmitter, antennae, or the like.

Parties were provided an opportunity to brief these issues. Each party did so in considerable detail. Chair Ewing reviewed the written filings and ruled on each preliminary issue in the Prehearing Conference Report and Order ("Prehearing Order") dated January 9, 1997. The Prehearing Order is incorporated herein by reference, but for the purpose of continuity, those provisions which clarify the limited scope of review in this case will be repeated. Specifically, Sections II.A.2 and II.A.3 are repeated in there entirety below:

> [II.A.] 2. Whether, in addition to Policies 2 and 4, the Board should review compliance with Policy 5, to determine whether the Project conforms with the requirements of the Windham Regional Plan, and thereby complies with Criterion 10 of Act 250.
>
> On reconsideration of a Board denial, the Commission properly limits its review to encompass only those aspects of the project or application which have been modified to correct deficiencies noted in the Board denial. EBR 31(B)(2). However, where circumstances warrant a more exhaustive review, due to project changes, different impacts, or new evidence, the Commission has the discretion to broaden its review. The Board Rules indicate that a finding on a criterion or issue in the prior permit proceeding shall be entitled to a rebuttable presumption of validity that the project, on reconsideration, remains in compliance therewith. See EBR 31(B)(2).
>
> Applicants have requested that the scope of the hearing be limited to a review of Policies Number 2 and 4 of the Windham Regional Plan. They cite as one reason to so limit the inquiry, the fact that the Commission only

reviewed these two policies. Notwithstanding the language of EBR 31(B)(2), the Board is obligated to conduct its review of this matter *de novo*. Obviously, the review is limited in some respect to that aspect of the Project which was declared by the Board's October 11, 1995 denial to have been deficient. The Board acknowledges that it will review essentially the same types of evidence, and will address nearly the same limited issues as were addressed by the Commission. This does not, however, require the Board to use the same analytical approach, or review only that evidence which was presented to the Commission. Indeed, such inflexible constraints on the Board's review would inappropriately curb a thorough and meaningful *de novo* review.

Having acknowledged the Board's requirement of conducting the review *de novo*, the Chair nonetheless reads the language of EBR 31(B)(2) regarding the scope of the Commission's review on reconsideration - and the establishment of rebuttable presumptions - to be equally applicable to the Board's appellate review of a reconsidered decision. The burden of proof under criterion 10 is upon the Applicant. However, in view of the foregoing discussion of EBR 31(B)(2), and the Board's October 11, 1995 decision, the Board will presume the validity of its prior findings with respect to Policy 5 (See Decision at pp. 12-20, & 26). Therefore, while the Applicants retain their burden to prove compliance with Policies 2 and 4 of the Windham Regional Plan, the Appellants will carry the burden of proving by a preponderance that the Applicants have failed to comply with the requirements of Policy 5 of the Windham Regional Plan.

Accordingly, because a comprehensive review of compliance with Policies 2 and 4 of the Windham Regional Plan may require the Board to also consider Policy 5, the Board declines to limit the scope of its review to evidence addressing only Policies 2 and 4.

[II.A.] 3. Whether the language of the telecommunications policies of the Windham Regional Plan addressing existing facilities and existing stations, includes only those facilities and stations which are specifically designed for the transmission of telecommunication or radio broadcast signals, or whether the terms "facilities" and "stations" should be interpreted more broadly to include other structures, including those not designed for telecommunications purposes, but which for some reason (height, prominence, proximity to transmittees, etc.) are aptly suited for the purpose of accommodating a

broadcast transmitter, antennae, or the like.

Chair Ewing concurs with the Applicants that the phrases "existing station" and "existing facility," as these occur in the Windham Regional Plan, should be accorded a plain meaning. Thus, without opining on precisely what constitutes an existing station or facility, the Board will apply the plain meaning of these terms - those communications structures that are already built. With respect to the issue of co-location, this reading provides a starting point for determining which structures ought to be considered for co-location purposes. An overly broad reading that interpreted this language to include such existing structures as water towers, steeples, or silos, would lead the Board down a path toward unnecessary confusion over the issue of what then constituted an existing structure.[1] Although Appellant Sarah Ann Martin correctly points out that the term "facilities" is not specifically limited to transmission and receiving stations, the Board will read such a limitation as the plain meaning of the language as used in Policies 2 and 4 of the Windham Regional Plan.

III. THE EVIDENTIARY HEARING

On May 21, 1997, the Board convened a hearing in this matter in Grafton, Vermont. The following parties participated:

The Applicants by their counsel, R. Brad Fawley of Downs, Rachlin & Martin;
Appellant Sarah Ann Martin, by her counsel, Jonathon Bump;
Appellants Edmund and Veronica Brelsford, by their counsel, Gerald R. Tarrant; and
The Windmill Hill Pinnacle Association by its representative, Beverly Major.

After commencing the hearing, the Board conducted a site visit to the proposed tower site, and to several locations from which the proposed tower would be visible. The Chairman described the site visit for the record and there were no objections to the Chair's description. Thereafter, the Board proceeded to hear testimony through cross-examination by the parties. Immediately following the consideration of evidence in this matter, the Board deliberated. The Board next deliberated on July 23, 1997 and again on August 13, 1997. This matter is

---

1 With respect to mitigation of adverse aesthetic impacts, this analysis should not be read as discouraging the siting of transmission and receiving facilities on prominent "structures," whether previously existing or newly constructed, which blend more favorably with the surrounding human-built or natural environment.

now ready for a decision. To the extent any proposed findings of fact and conclusions of law are included below, they are granted; otherwise, they have been considered and are denied. See Petition of Village of Hardwick Electric Department, 143 Vt. 437, 445 (1983).

IV. ISSUE

The sole issue in this proceeding is whether the Applicants have remedied those deficiencies in their proposed Project which were identified by the Board in its Decision. The specific focus of the Board's inquiry will be determining compliance with the Regional Plan, and in particular, with Policies 2, 4, and 5 of the Regional Plan. The only Act 250 criterion under appeal is Criterion 10.

V. FINDINGS OF FACT

General

1. Gary Savoie d/b/a WLPL and Eleanor Bemis, the owner of the proposed tower site, were issued Land Use Permit #2W0991 as co-permittees by the District #2 Environmental Commission on May 21, 1996.

2. The Applicants propose to construct and operate a 110 foot communications tower with an equipment shelter, emergency generator, access trail, and power line as ancillary improvements ("Project").

3. The stated purpose of the proposed tower is to broadcast the signal of a commercial FM radio station to the Walpole, New Hampshire area. The signal would be transmitted via frequency modulation (FM) radio waves.

Applicable Provisions of the Windham Regional Plan

4. The relevant policies of the Regional Plan, all of which pertain to the proper siting of communications facilities, follow:

    2. Encourage expansion of communications at existing transmission and receiving stations if such expansion is in the best public interest.

    4. Discourage the development of new sites for transmission and receiving stations in favor of utilizing existing facilities.

    5. Strongly encourage the siting and design of satellite dishes, radio towers, antennae and other transmission and receiving

equipment to minimize negative impacts on natural and scenic resources.

FCC Allocation

5. In 1985, the Federal Communications Commission (FCC) created an allocation for a new FM radio station to serve the Town of Walpole, New Hampshire.

6. The FM signal that would be transmitted has been allocated by the FCC for a certain area. The specific area is characterized by the FCC as the "Area to Locate." To meet the FCC requirements, and to increase the probability of receiving an FCC license, the signal strength must be sufficient to reach a stated percentage of the residents of Walpole, New Hampshire. The FM frequency which would serve this allocation area is 96.3 MHZ and its maximum power level would be 1.9 kilowatts, DA max.

7. The FCC regulates the allocation and siting of FM radio transmitters and is the sole entity with the legal authority to allocate bandwidth for FM transmission. In addition to authorizing FM channels, the FCC has the related, but distinct, authority to grant construction permits for FM/telecommunications towers, and also the plenary authority to grant an FCC license.

8. Once an FCC allocation has been made for an FM station, the next step in the process at the FCC is that anyone who wishes to construct a communications facility with the intent of disseminating a signal on the allocated channel to reach the area to serve may file an application for a construction permit provided that the proposed facility or tower is within the Area to Locate.

Applicant Savoie's FCC Construction Permit

9. Mr. Savoie communicated to the FCC his intent to establish an FM radio station in the Walpole, New Hampshire area. Specifically, Mr. Savoie applied for a construction permit for a 180 foot tower on Bemis Hill that he claims would serve a sufficient percentage of the residents of Walpole to warrant the issuance of an FCC license.

10. On May 6, 1993, the FCC granted Mr. Savoie a construction permit that requires his facility to serve the Town of Walpole, New Hampshire. Among other requirements, the signal from the transmission facility must meet

certain separation and contour protection requirements to ensure that the signals of other radio stations are protected.

11. Although the FCC construction permit does not specify the exact location for the proposed transmission facility, it does specify a designated Area to Locate.

12. The Area to Locate within which Mr. Savoie seeks to operate the proposed FM radio transmission facility is graphically depicted in Exhibit GS-12. GS-12 depicts an Area to Locate for the FM allocation of frequency 96.3 MHZ (colored in blue) and a "grandfathered" allocation of Channel 242 permitted under Mr. Savoie's FCC construction permit (colored in yellow).

13. These areas to locate include all or a portion of the following Vermont towns: Grafton, Windham, Rockingham, Athens, and Westminster. The Area to Locate also includes Walpole, New Hampshire and a portion of its surrounding lands.

14. In his testimony, Mr. Savoie frequently refers to his "FCC license" when he intends to discuss either the FCC construction permit or alternatively, the FCC allocation. Without venturing into the legal implications of securing an FCC construction permit as compared with an FCC license, as a factual matter, the two authorizations are distinct and the terms are not interchangeable.

15. The specifications of the proposed transmission facility which Mr. Savoie submitted in his FCC Construction Permit application depicted a 180 foot tower that was designed to provide FM radio service within the Walpole, New Hampshire area to serve.

16. Without seeking an amendment to the FCC Construction Permit, Mr. Savoie determined that the proposed tower would only need to be 110 feet high.

17. In the District Commission proceeding, and in the present appeal, the application materials depict a 110 foot tower. From most vantage points a 110 foot tower is less visible than a 180 foot tower.

18. Mr. Savoie has not secured an independent FCC construction permit to build a 110 foot tower nor has he received a permit amendment authorizing the change from a 180 foot tower to a 110 foot tower.

19. In order to obtain an FCC construction permit for the tower that he actually proposes to construct, Mr. Savoie would be required to file a Form 301 application requesting that his construction permit be modified to change the antenna height, the height of the center of radiation, the Effective Radiated Power ("ERP"), and any other pertinent data associated with a lowering of the authorized antenna height.

Coverage

20. The concept of "coverage" pertains to a transmission facility's capacity to disseminate a signal of a sufficient strength (70 decibels as measured on the dBu scale) to a designated proportion of the target audience within the area to serve.

21. The measurement of requisite signal strength is set forth in the FCC regulations as a "principal community coverage requirement." Specifically, FCC Rule 73.315(a) states that an FM station must place a signal of 70 dBu or greater "over the entire principal community to be served." However, in practice the FCC requires that an applicant for an FCC license demonstrate only "substantial compliance with the principal community coverage requirement."

22. Substantial compliance means the provision of a 70 dBu signal over at least 80% of the residential area for the target site. The residents of Walpole, New Hampshire are the targeted recipients of the proposed WLPL FM signal.

23. As an engineering proposition, it is questionable whether the diminution in tower size from 180 feet to 110 feet could still transmit of a signal of requisite strength to cover the Town of Walpole in a manner that would comply with the FCC's "coverage" requirements.

24. The broadcast of an FM signal from a 110 foot tower on the Bemis Hill site, transmitting at an ERP of 2,150 watts would effect coverage of 681 residents of Walpole, New Hampshire, or 21 percent of its population.

25. The projected coverage from the proposed tower site falls far short of "substantial compliance with the principal community coverage requirement" required by FCC regulations. Thus, FCC approval of the proposed Project, if constructed, would be unlikely without substantial project modifications or at the very least a considerable increase in the proposed Project's ERP.

26. Coverage is a function of a multitude of variables including the height of the transmission facility, the ERP, the topography of the landscape intervening between transmission facility and target audience, and, to some degree, the presence of other radio signals (i.e. interference).

27. At the time of Mr. Savoie's construction permit application, the FCC was using antiquated coverage prediction formulas that did not adequately account for terrain blockage near the transmitter site.

28. A 110 foot tower on the Bemis Hill site would not provide a direct line-of-sight path to the area to serve in and around Walpole, New Hampshire. A direct path is not absolutely necessary, but it is highly desirable. Appellants' Exhibit AM4 in its depiction of the Bemis Hill Site (Site 5) graphically demonstrates that a ridgeline impedes the signal for a considerable distance from kilometer 3.5 through kilometer 8 (from the proposed facility to the target - depicted from left to right on the figure's *x* axis).

29. FM radio waves do not curve around obstacles very well. Intervening topographic features do not eliminate a signal's strength, but weaken it considerably by deflecting it. The consequence is that signal strength is affected by significant shadowing and multipath distortion.

30. A computer modeling technique known as the Okumura Terrain-loss Model more accurately approximates the coverage that would be effected by a given signal to a specified site, after accounting for terrain loss. This model is used widely by cellular, paging and other telecommunications services to more realistically predict their coverage area for site planning purposes.

31. The use of the Okumura terrain-loss Model, or some other alternative which accurately predicts signal coverage, is permitted under FCC Rule 73.313(e).

32. Based on the Okumura terrain-loss model, no signal equal to, or exceeding, 70 dBu will reach the area to serve from an FM transmitter located on Bemis Hill.

33. Other existing facilities closer to the target population of Walpole, New Hampshire, even if significantly shorter than the proposed tower, and even if operated at a substantially lower ERP, could effect coverage of up to 88 percent of the Walpole population.

34. The following alternative sites, all of which were identified by the Appellants, would effect the percentage of coverage noted in the table. The table also notes the ERP and tower height necessary to effect such coverage:

Site of Existing Facility	*Mt. Kilburn (Site 1)*	*Oak Hill-Fire Dept., Bellows Falls (Site 2)*	*Oak Hill-NEPS N. Westminster (Site 3)*	*VT EMS, GRAS, (Site 4)*
Transmitter Elevation	330m/ 1083 ft.	250m/ 820 ft.	240m/ 787 ft.	160m/ 525 ft.
Tower Height	10 m/32.8 ft.	10m/32.8 ft.	10m/32.8 ft.	10m/32.8 ft.
Distance from Walpole	5.85 km/ 3.16 miles	6.06 km/ 3.27 miles	5.38km/ 2.90 miles	5.13 km/ 2.77 miles
Coverage	88	69	81	79
ERP	575 watts	900 watts	975 watts	3000 watts

All coverage estimates depict a percentage of the population of Walpole, New Hampshire.

35. The technical specifications for the above-noted alternative sites were prepared by and submitted by the Appellants. The Applicants did not demonstrate that any similar technical feasibility assessments of alternate sites had been prepared.

36. Each of the sites depicted in the above table are technically feasible alternatives to the Bemis Hill site.

37. There are other existing facilities within the Area to Locate besides those identified in the above table. However, there is no evidence involving assessments of either predicted coverage or technical feasibility with respect to those additional sites.

38. The proposed tower would consist of the following:

    a. A ROHN 65g tubular tower with three sets of guy wires.
    b. Tower attachments including:
        i. one FM broadcast array antenna;
        ii. one paraflector;
        iii. two remote pickup units (RPUS).

39. Appurtenant to the tower would be the following:

    a. A 15' by 30' ROHN prefabricated equipment shelter;
    b. An emergency generator;
    c. An access trail;
    d. A private power line.

Project Tract

40. The location in which the Applicants seek to erect the proposed tower is a parcel of forested land amidst a relatively contiguous deciduous/hemlock/spruce forest. While not a pristine wilderness, the proposed tower location is largely undisturbed by human-made structures.

41. The ridgeline that includes Bemis Hill is unobstructed by human-made structures. Presently, no structure protrudes above the tops of the trees which comprise the mountaintop ridgeline that is visible from a distance. The result is an apparently undisturbed forested landscape.

42. The proposed tower would be situated on a forested hillside. The physical impact of constructing the proposed tower would only minimally disturb the trees, soil, and terrain below the tower.

43. Access to the proposed tower site would be via Ober Hill Road, a Class IV road. A section of existing logging/pasture trail would be improved for construction access.

44. The proposed tower would be accessible by snowmobiles or all-terrain vehicles on a year-round basis.

45. The proposed tower would extend approximately 60 feet above the tops of the trees which are presently standing. During periods of partial to full foliage cover, the remaining 50 feet would be obscured by leaves and/or woody vegetation. However, during the seasons in which the deciduous trees surrounding the site were without leaf cover, the lower sections of the tower might also be visible.

46. The width of that portion of the tower which would protrude above the trees would be 26.25 inches. The tower is constructed using an equilateral triangle design and would, therefore, appear equally wide from one vantage point as any other.

47. Federal Aviation Administration (FAA) regulations require towers greater than 200 feet in height to be illuminated by beacon lights. Because the proposed tower would only be 110 feet high, the tower would not require beacon lighting, and therefore, would not be visible on most nights.

Transmitter Specifications / Applicants' Needs

48. The unobstructed mounting area needed to accommodate the proposed transmission facility is 27 feet (lateral space). In addition, the transmitter would need approximately 7 feet above and below the antenna array.

Alternatives

49. Depending on structural stability and several other factors including windload and the type of existing guy wires (e.g. steel or fiberglass), an existing facility (including, but not limited to, those identified in the table at Finding of Fact 34) may need to be reconfigured or perhaps substantially redesigned to accommodate the Applicants' technical requirements.

50. Accommodation of new FM signal transmitters on existing facilities does not necessarily pose an obstacle to the continued functioning of those existing telecommunications or radio broadcast apparatus.

51. There are a number of existing facilities within the Area to Locate which could adequately host the WLPL proposed transmitter. Some of these may require significant modifications while others only slight adjustments.

Identification of Existing Facilities by the Appellants

52. In order to ascertain the physical locations of these towers, and hence, enable the study of their suitability for collocation, Applicant Savoie conducted a survey of an on-line database known as "Dataworld." This database maintains a data base of all FCC and FAA registered towers requiring clearance. Such database can be searched for a specified Area to Locate.

53. Dataworld lists only those towers greater than 200 feet in height - those which require blinking aviation lights. Most residents of Windham County would already be familiar with these sites and therefore, even one without an extensive background in tower siting issues would comprehend that a survey of the Dataworld listing would reveal no additional towers.

54. Mr. Savoie conducted a physical inventory. He contacted local power companies, put up notices at local stores, searched land records, and drove around many roads that traverse the Area to Locate. This search, purportedly consisting of approximately 200 hours, was not focused upon the most reliable indicators of existing facilities.

55. For the past eight or nine months, the FCC has maintained a master list of licensed tower sites on the Internet. Mr. Savoie did not review this compilation of towers.

56. There are approximately fifteen FCC licensed facilities in the region.

Applicants' Search for Existing Facilities and Effort to Collocate

57. Mr. Savoie did not develop a site specific plan or engineering analysis to determine what design changes may be needed to accommodate WLPL on Mount Kilburn or any other location that was identified by the Appellants.

58. Subsequent to the Board's decision denying the permit application, Mr. Savoie contacted the operator of the Mount Kilburn site. In a letter dated November 7, 1995, Mr. Savoie laid out the technical specifications that would be required for collocation of the WLPL transmitter on the Mount Kilburn/Fall Mountain Site and requested that he be permitted to locate his FM transmission facility there.

59. The Mount Kilburn site is operated by Warner Cable ("Mount Kilburn Tower"). On November 27, 1995, Terry Gould, Time Warner Cable's General Manager, responded to Mr. Savoie's request. General Manager Gould noted that Warner Cable would be unable to meet Mr. Savoie's request for forty one feet of unobstructed tower space, and could not convert from its steel guying cables to fiberglass.

60. There is no evidence of a counter-proposal or a modified request to locate on the Mount Kilburn tower. There is also no evidence of the submission of similar requests to locate the WLPL transmitter on any other existing facilities prior to the application for reconsideration with the District Commission.

61. The Applicants submitted their application for reconsideration with the District #2 Environmental Commission on January 9, 1996.

62. The deadline for the filing of prefiled direct testimony in this matter was on Tuesday, February 18, 1997.

63. Within the period extending from the date of the Board's initial Decision until the deadline for the filing of prefiled testimony in the present appeal, Applicants submitted only two documents that demonstrated an attempt to collocate on an existing facility within the Area to Locate. Both pertain to the Mount Kilburn tower.

    a. Exhibit GS-13 is a letter dated November 7, 1995 in which Co-Applicant Savoie contacted Terry Gould, the General Manager for Warner Cable, which operates the Mount Kilburn/Fall Mountain Tower. The letter sets forth the technical requirements for the proposed WLPL FM transmitter. It makes no reference to any

specific design modifications that the Applicants propose to ensure compatibility with the existing facility, except that Applicants note that in order to accommodate the added windload, fiberglass guy wires would probably need to replace steel guys. Applicants note that such a change may not be possible due to previous structural modification.

b. Exhibit GS-14 is a letter dated November 27, 1995 in which Terry Gould of Warner Cable responds to Co-Applicant Savoie's November 7, 1995 request by declining to accept it on the basis that the additional weight and loading factors are unacceptable.

64. From a purely technological standpoint, the Mount Kilburn site is superior to the Bemis Hill site because of its greater capacity to effect coverage over more than 80 percent of the Walpole population. Moreover, because of its proximity to Walpole, it could effect such coverage at a relatively low ERP.

65. For similar reasons, the sites identified as sites 2, 3, and 4 in Finding of Fact 34, would also be superior to Bemis Hill from a technological standpoint, although each of these towers might need to be modified somewhat to accommodate the proposed FM transmission facility.

66. Applicants submitted another letter that was sent to Mr. Gould of Warner Cable via facsimile on February 3, 1997 requesting to collocate on the Mount Kilburn tower. This letter is nearly an exact duplicate of the letter sent on November 7, 1995; consequently this letter did not provide additional information or either technical or financial incentives to Warner Cable in conjunction with the collocation request. The request was again denied.

67. Despite Mount Kilburn's superior position in relation to the area to serve, the Mount Kilburn site, after minimal negotiation between Mr. Savoie and the tower operators, was not made available to Applicants for broadcasting.

68. Applicants did not contact representatives of the 3 other sites recommended by the Appellants until after receiving general information and technical studies of those sites that were prepared by Appellants' consultants in the prefiled testimony.